

MEASUREMENT APPARATUS FOR MEASURING THE POSITION AND ORIENTATION OF A FIRST PART TO BE WORKED, INSPECTED OR MOVED

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Abstract

Apparatus for measuring the position and orientation of a first part (1) to be worked, inspected or moved, which first part (1) is to be carried by the apparatus or is separate therefrom, including an end-effector (2), at least two imaging devices (3a, 3b), each attachable to the end-effector (2) and each configurable to image a first face (4) of the first part (1), a plurality of first light sources (5), which first light sources (5) include active light sources and/or illuminable reflecting points and are positionable on said first part (1), so that when light is projected or reflected from each of the first light sources (5) when positioned on the first surface (4) of the first part (1), a distribution of light is generated at each of said at least two imaging devices (3a, 3b), each of which at least two imaging devices (3a, 3b) is operable to output signals (6a, 6b) indicative of the distribution of light received by the respective imaging device, a processor (7) for receiving and processing the output signals (6a, 6b) indicative of the distribution of light from each of said imaging devices (3a, 3b), and calibrating means (12) in operative association with the processor (7) for calibrating the output signals (6a, 6b) indicative of the distribution of light processed by the processor (7) so as to define the position and orientation of the first part (1).

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